

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-22 (Canceled).

Claim 23 (New): A surface plasmon microsensor or nanosensor for chemical or biological species, comprising:

pads distributed on the surface of a support, the pads including at least one electrically conductive material and configured to immobilize the chemical or biological species, the pads having a dimension less than 1 μm .

Claim 24 (New): A microsensor or nanosensor according to claim 23, wherein the pads are distributed on the surface of the support according to a two-dimensional matrix.

Claim 25 (New): A microsensor or nanosensor according to claim 23, wherein the pads have a section in a shape of a circle or an ellipse.

Claim 26 (New): A microsensor according to claim 25, wherein the section of the pads has its largest dimension between 0.5 μm and 1 μm .

Claim 27 (New): A microsensor or nanosensor according to claim 25, wherein the section of the pads has its largest dimension less than 0.5 μm .

Claim 28 (New): A microsensor or nanosensor according to claim 23, comprising at least first and second networks of pads, a shape of a section of the pads of the first network being different from a shape of a section of pads of the second network.

Claim 29 (New): A microsensor or nanosensor according to claim 23, wherein the electrically conductive material is gold or silver.

Claim 30 (New): A microsensor or nanosensor according to claim 23, wherein the pads are formed by superposition of at least two different metallic layers.

Claim 31 (New): A microsensor or nanosensor according to claim 23, wherein the pads are formed by superposition of a metallic layer integral with the support and an ultra thin layer of a material enabling attachment of the chemical or biological species.

Claim 32 (New): A microsensor or nanosensor according to claim 23, wherein the surface of the support is a surface of a material chosen among dielectric materials, semiconductor materials, and metallic materials.

Claim 33 (New): A microsensor or nanosensor according to claim 23, further comprising means for increasing sensitivity of the sensor.

Claim 34 (New): A microsensor or nanosensor according to claim 33, wherein the means for increasing the sensitivity of the sensor includes a thin metallic film deposited on the surface of the support.

Claim 35 (New): A microsensor or nanosensor according to claim 34, wherein a thin dielectric film is intercalated between the thin metallic film and the pads to adjust plasmon resonance as a function of thickness of the dielectric layer.

Claim 36 (New): A microsensor or nanosensor according to claim 33, wherein the means for increasing the sensitivity of the sensor includes a planer wave guide configured to convey a guided electromagnetic mode, the planar wave guide being formed on the surface or under the surface of the support and under the pads.

Claim 37 (New): A microsensor or nanosensor according to claim 33, wherein the means for increasing the sensitivity of the sensor is constituted by grouping together of pads, a distance separating the grouped together pads being sufficiently small to allow an electromagnetic coupling between the grouped together pads.

Claim 38 (New): A microsensor or nanosensor according to claim 33, wherein the pads having a section in a form of an ellipse, and the means for increasing the sensitivity of the sensor is constituted by a small distance separating an end of a pad along the major axis of the ellipse from the end of the adjacent pad along the major axis of the ellipse, this small distance enabling an electromagnetic coupling between the pads.

Claim 39 (New): A microsensor or nanosensor according to claim 33, wherein the means for increasing the sensitivity of the sensor includes at least one particle associated with a pad.

Claim 40 (New): A microsensor or nanosensor according to claim 39, wherein the at least one particle is chosen from the group composed of metallic particles and fluorescent particles.

Claim 41 (New): A microsensor or nanosensor according to claim 39, wherein the at least one particle is a particle fixed to the chemical or biological species.

Claim 42 (New): A microsensor or nanosensor according to claim 39, wherein the at least one particle is fixed to an object intended to be placed near to a pad.

Claim 43 (New): A microsensor or nanosensor according to claim 42, wherein the object is the tip of a near field optical microscope.

Claim 44 (New): Use of the microsensor or the nanosensor according to claim 23 to carry out Raman spectroscopy at a level of detection by a reading system for identification of the chemical or biological species immobilized on the pads of the microsensor or the nanosensor.